

# SQL SUBQUERIES & SET OPERATORS

Single-row, Multi-row, Correlated Subqueries

UNION, UNION ALL, INTERSECT, EXCEPT/MINUS

**Monti Kumar Raj**

# SUBQUERIES

- A query inside another query.
- Can be used in Select, Where, From clauses.

## ■ Find employees who earn more than the average salary

```
Select empname, salary  
from employees  
where salary > (select avg(salary) from employees);
```



# SINGLE-ROW SUBQUERY

- Returns only one value.
- Used with =, >, <.
- **Example:**  
select empname, salary from employees  
where salary > (select avg(salary) from employees);

# MULTI-ROW SUBQUERY

- Returns multiple values.
- Used with IN, ANY, ALL.
- **Example (IN):**  
select empname from employees where deptid in (select deptid from departments where location='new york');
- **Example (ANY):**  
select empname, salary from employees where salary > any (select salary from employees where deptid=5);
- **Example (ALL):**  
select empname, salary from employees where salary > all (select salary from employees where deptid=5);



# CORRELATED SUBQUERY

- Executed once for each row in the outer query.
- Depends on outer query values.
- **Example:**  
select e.empname, e.salary, e.deptid from employees e  
where e.salary > (select avg(salary) from employees where deptid =  
e.deptid);

# SET OPERATORS

- Combine results from multiple queries.
- Rules: Same number of columns, same data types.



# UNION VS UNION ALL

- **UNION** → Combines results, removes duplicates.
- **Example:**  
select empname from employees\_us union select empname from employees\_uk;
- **UNION ALL** → Combines results, keeps duplicates (faster).
- **Example:**  
select empname from employees\_us union all select empname from employees\_uk;

# INTERSECT

- Returns common rows from both queries.
- **Example:**  
select empname from employees\_us intersect select  
empname from employees\_uk;



# EXCEPT / MINUS

- Returns rows from first query not in the second.
- **EXCEPT** → SQL Server, PostgreSQL.
- **MINUS** → Oracle.
- **Example:**  
select empname from employees\_us except select  
empname from employees\_uk;